User's Guide
Version 2.3

Environmental Protection Agency
Office of Superfund Remediation
and Technology Innovation

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Disclaimer

Please note that the data and resulting scores rely on your understanding and adherence to the rules of the Hazard Ranking System (HRS). Use of this product does not guarantee that an HRS package that you submit for National Priorities List (NPL) consideration is either qualified or compliant with the guidance and rules of the HRS. All packages and scores are subject to EPA Headquarters inspection and qualification. NPL Characteristics Data Collection Forms and documentation records cannot be generated using this model.

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1.0 Getting Started

1.1 What is HRS Quickscore?

HRS Quickscore was created by the State, Tribal, and Site Identification Center of the U.S. Environmental Protection Agency (EPA). It was designed to assist in scoring sites using EPA's Hazard Ranking System (HRS). The HRS Quickscore model was designed to resemble the pathway scoresheets in the HRS.

HRS Quickscore's key functions include the following:

- HRS site and pathway score calculations;
- HRS scoresheet printing; and
- Scratch pad to make notes as you work.

Note: Calculations are made by HRS Quickscore every time you move to a new data entry field (via tabbing, clicking, or entering). You should wait for the calculations to be performed before using any of HRS Quickscore's other functions.

1.2 Who should use HRS Quickscore?

This product is intended for use by those individuals who plan and implement Preliminary Assessments (PAs) and Site Inspections (SIs) and other data collection efforts according to the HRS rules, as well as those individuals that write and review HRS documentation records. You should have a basic knowledge of the HRS and the HRS factor values.

1.3 What type of equipment do I need to run HRS Quickscore?

HRS Quickscore is designed for a computer running Windows 95 or a higher version. Your computer must also have at least 16 MB of RAM and 10 MB of free space on the hard drive.

1.4 How do I install HRS Quickscore?

Step 1: If installing from a CD ROM, identify your CD drive or, if downloading from a network, identify the drive and directory where HRS Quickscore is located.

Step 2: Locate the QuickscoreSetup.exe file on your CD drive or in the directory where you downloaded HRS Quickscore.

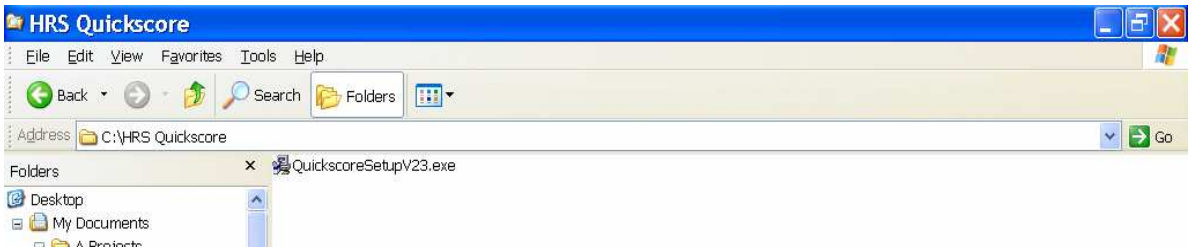


Figure 1-1

Step 3: Double-click on the QuickscoreSetup.exe file.

Step 4: Follow the prompts in the installation process.

The screens of the installation process are as follows:

Figure 1-2

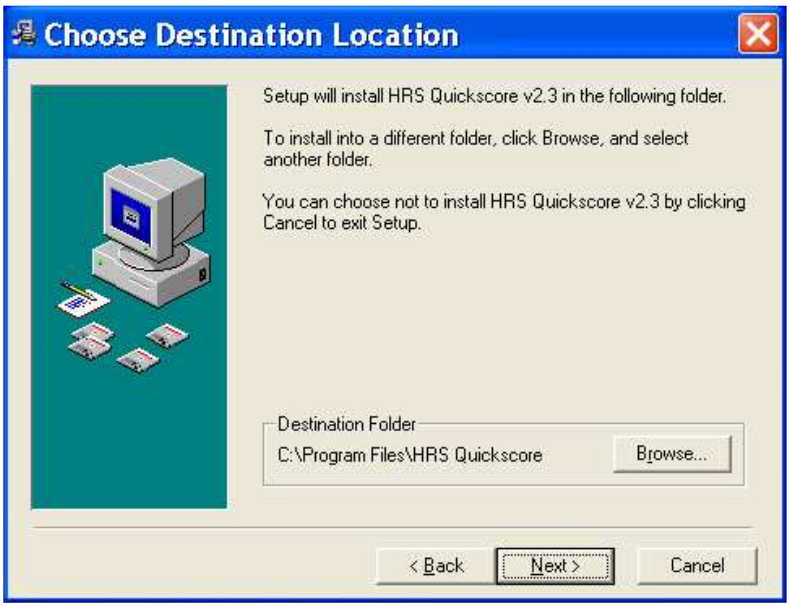


Figure 1-3

This screen (Figure 1-3) allows you to change the installation directory from the default of C:\Program Files\HRS Quickscore to whatever you prefer. Select "**Browse...**" to change the installation directory.

Figure 1-4

This screen (Figure 1-4) allows you to create backup copies of all files that will be replaced during the installation.

Figure 1-5

With this screen, shown in Figure 1-5, you may designate a program name for HRS Quickscore that will appear on your Start menu. Alternatively, you may accept the default name of HRS Quickscore.

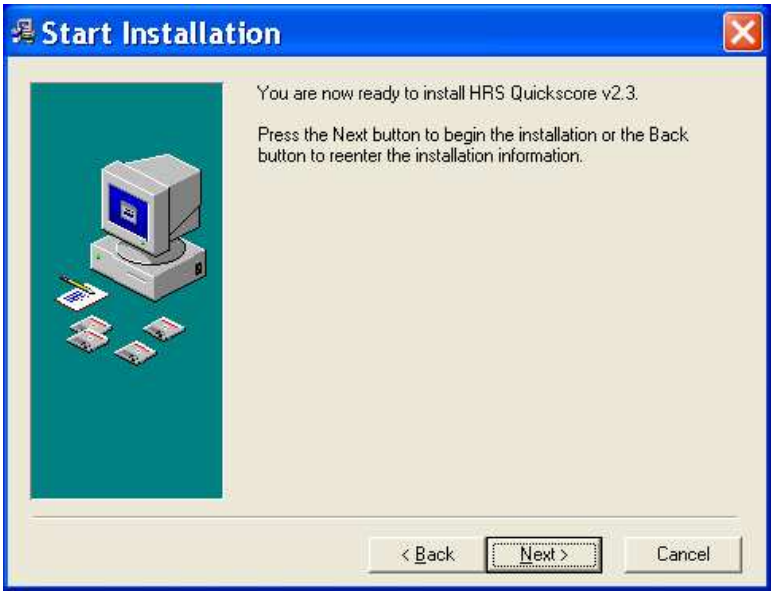


Figure 1-6

This screen, shown in Figure 1-6, gives you the opportunity to review your selections. Select "**Back**" if you want to change any of your selections. Otherwise, select "**Next**" to continue

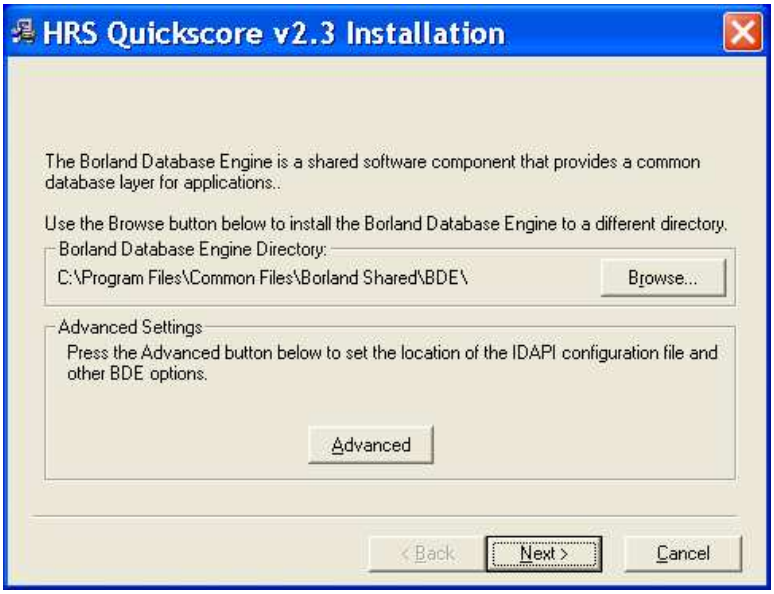


Figure 1-7

This screen (Figure 1-7) allows you to change the default installation directory for the Borland Database Engine. This may be necessary if your current files are stored on a network and you do not have write access to them. Most users should not need to make any changes here and can click "**Next**" to continue.

If you do need to make changes, select "**Browse...**" to change your desired Borland Database Engine installation directory.

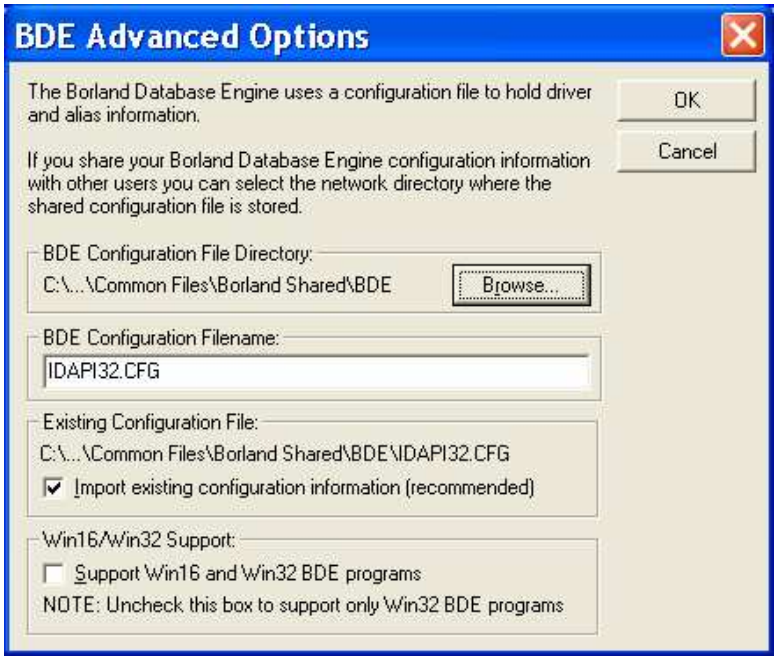


Figure 1-8

After selecting the install directory, to change the BDE directory you should select "**Advanced**" to setup the Borland Database Engine configuration file options. For the ***BDE Configuration File Directory*** panel, be sure to pick a directory located on your hard drive. Also, be sure that the box is checked *Import existing configuration information* in the ***Existing Configuration File*** panel. When you have finished with this screen, select "**OK**" to continue. Then select "**Next**" to continue with the installation.

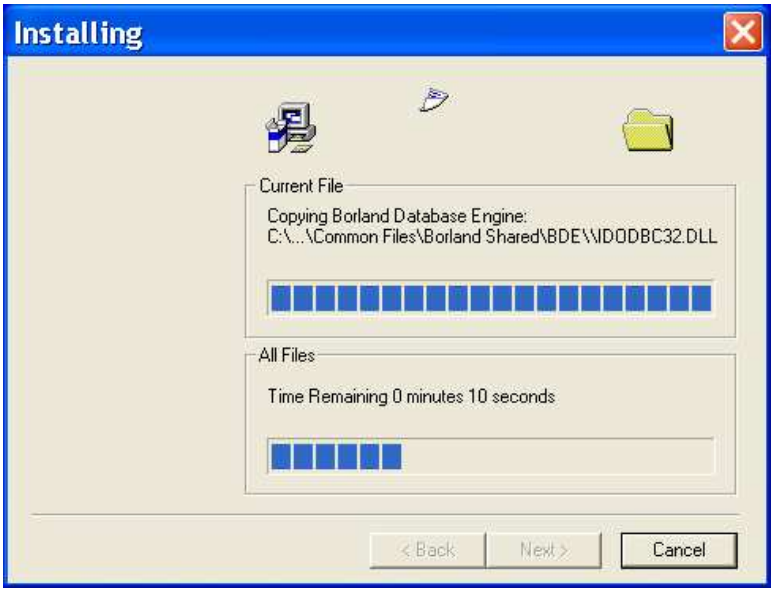


Figure 1-9

HRS Quickscore will start to load, the progress of which is indicated as shown in Figure 1-9.

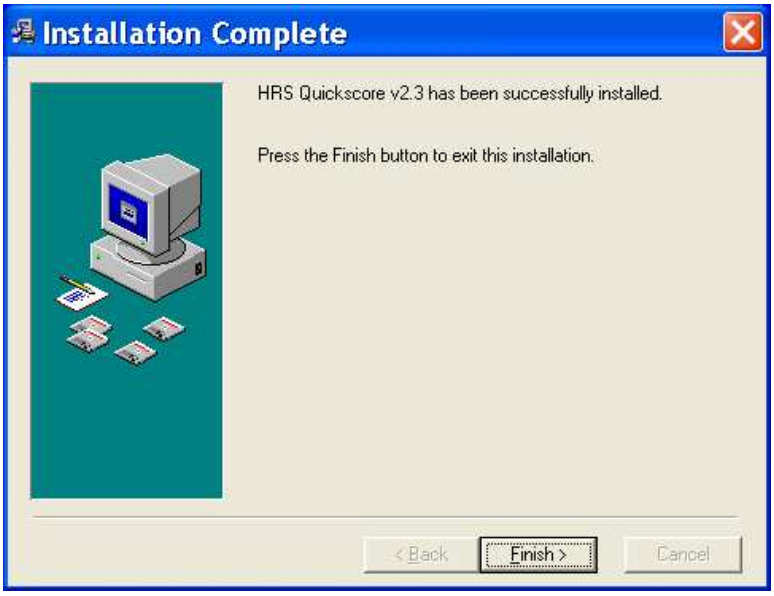


Figure 1-10

To complete the installation, it is recommended that you restart your PC. You may choose to do so immediately after the installation completes or opt to restart your PC at a later time. A shortcut will be created on your desktop and you will have an icon on your screen to click and start HRS Quickscore.

1.5 What do I need before I can begin?

HRS Quickscore is factor value driven, so you must understand the HRS situation that generates each factor value. Before you begin, make sure that you know what factor values you want to enter. To make things easier, you can print a blank scoresheet from HRS Quickscore, and use this to manually rough out your scoring scenarios and your factor values.

1.6 How do I start HRS Quickscore?

You can start HRS Quickscore by:

1) Selecting "**Start**" from Windows, then click Programs, and then clicking HRS Quickscore (or whatever name you selected during installation), OR
2) Double-clicking on the shortcut icon that you created on your desktop, OR
3) Going into Windows Explorer, go into the directory where you installed the program, and double-clicking on the HRS Quickscore.exe file.

1.7 Who should I contact if I need help using HRS Quickscore?

EPA sponsors HRS Quickscore Helpline which provides assistance to HRS Quickscore users. Remember, the helpline is just for assistance with using software, questions regarding the HRS itself, rule interpretation, guidance assistance, or policy must go to EPA.

HRS Quickscore Helpline
Operated by SRA International, inc.
703-247-5751
quickscore@sra.com

Questions regarding HRS Quickscore and other HRS Site Assessment tools may also be directed to:

Nicholas Rebeck, US EPA
1200 Pennsylvania Avenue NW
Washington, DC 20460
rebeck.nick@epa.gov
(703) 603-8811

2.0 Getting Around

2.1 How is HRS Quickscore organized?

HRS Quickscore organizes information that you enter by site and, then, by scenario. It does not create electronic files for each site or each scenario. Instead, each scenario is maintained in a spreadsheet or database that is organized by site name for easy retrieval. The current scenario is the one which is presently open on your computer. When opening, copying, or deleting a scenario, you must first open that scenario if it is not the current scenario. Information on opening existing scenarios can be found below in subsection 2.3.2.1.

The HRS Quickscore screens were designed to mimic the look of the scoresheets found in the HRS. The concept is to enter data into HRS Quickscore as you would when calculating the HRS score by hand using the HRS scoresheets. There is one screen per pathway, component, and/or threat and one screen for the site score. These screens will be discussed in more depth later in this manual.

2.2 What are some of the standards and conventions used by HRS Quickscore?

All of the screens in HRS Quickscore are similar in that they are composed of two different data entry fields. Fields with black writing are for value entry. Fields with blue writing are areas in which values will be calculated by HRS Quickscore. HRS Quickscore automatically calculates the value when you advance to the next field.

Note: Not all fields and pathways need to be completed to obtain a pathway or site score.

2.3 What are the screen components?

This section describes each of the key features that appear on the HRS Quickscore screen. The first screen in HRS Quickscore, the HRS Summary Scoresheet, is seen in Figure 2-1. On this screen, you will find the maximize button, the system menu and the navigation bar.

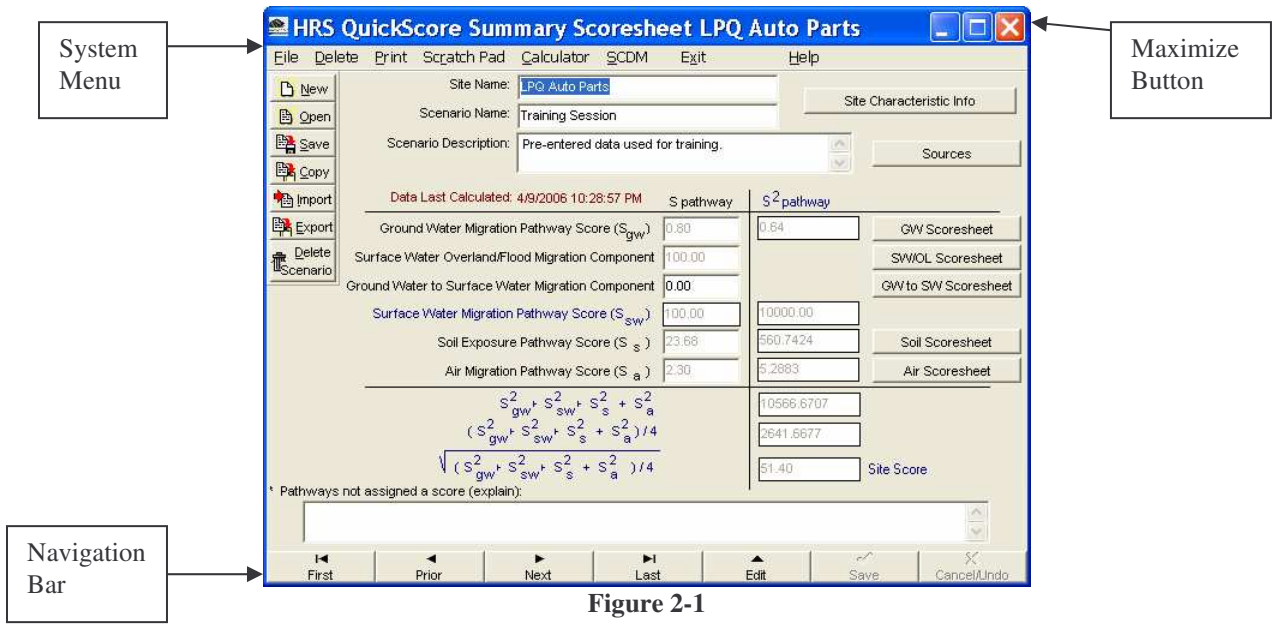


Figure 2-1

2.3.1 How do I use the maximize button?

The maximize button, located in the upper right-hand side of the screen, adjusts the screen to fit the entire area on your monitor. Once enlarged, a minimize button will appear in the upper right-hand corner of your screen. Selecting the minimize button will reduce the area of the HRS Quickscore screen on your desktop.

2.3.2 How do I use the system menu?

2.3.2.1 How do I use the File option (New, Open, Save, Copy, Import, and Export)?

Click File on the system menu and you are presented with seven options: New, Open, Save, Copy, Import, and Export. These options also appear as buttons located on the upper left hand corner of the HRS Summary Scoresheet.

Use the first option, **"New"**, to create a new scenario. If you select this option, either with the button or from the file menu, a blank HRS Summary Scoresheet will appear. Just type in your new site name and you are ready to start entering information in your new scenario. The scenario will automatically be saved.

The second menu option is **"Open."** You can use this button to open an existing scenario that you have already created and saved. Figure 2-2 shows an example of the site/scenario name list that appears when you select a site/ scenario to open. Highlight the desired file and click on **"Open"** to access your file. You can then enter or modify information in this scenario.

The third menu option is **"Save."** When you select this button, HRS Quickscore will save the scenario that you are currently editing.

Note: HRS Quickscore automatically saves your scenario each time new calculations are performed, so it is generally not necessary to use the save button.using under its current name to your hard drive in the same file folder where HRS Quickscore is located.

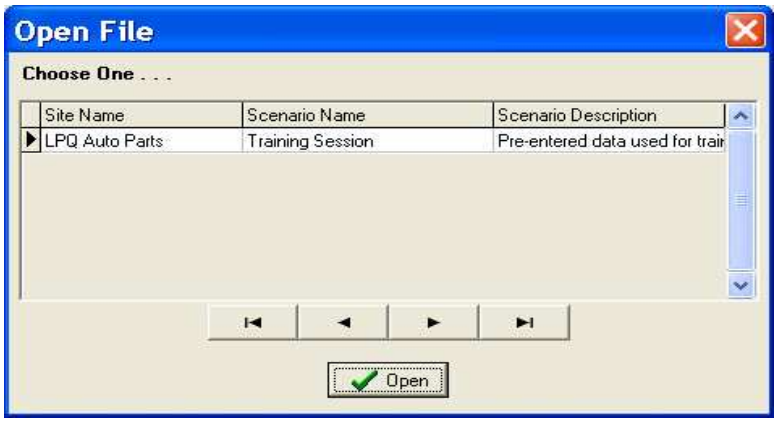


Figure 2-2

The fourth menu option is **"Copy."** The purpose of this button is to make a copy of an existing scenario. This feature can be useful when you want to score different scenarios at a site. You can make a copy of an existing scenario and then modify the information in the new version, saving you the time of re-entering information.

When you click on **"Copy,"** you are presented with the screen in Figure 2-3. You can either keep the same site name or edit it from this screen. Enter the new scenario name. Select **"Copy"** when you are ready to proceed.

Figure 2-3

If you choose not to proceed, select **"Cancel."**

The fifth menu option is **"Import."** The purpose of this button is to import a session to your HRS Quickscore data files that was exported from an outside source, such as a co-worker's data files. Because many files are used to create one session, zipping the session data files is the best way to transport a session from one computer to another. Unzip and save the session data files in a folder on your hard drive. Next, the session has to be imported into HRS Quickscore. When you select **"Import,"** you are asked to select the site name/scenario you wish to import. Browse to the location on your hard drive where the unzipped session data has been saved, and select the session you wish to import. Assign the new session a name in the space provided in the lower right corner, and select the import button (Figure 2-4) to complete the function.

Figure 2-4

The sixth option is **"Export."** The purpose of this button is to export a session to another person's HRS Quickscore program. To export a session, first create an empty folder on your hard drive. When you select **"Export,"** you are

Note: If you export a file/scenario to a folder that is not empty, HRS Quickscore will copy over all other files in that folder upon export. A warning to this affect will appear when you export data.

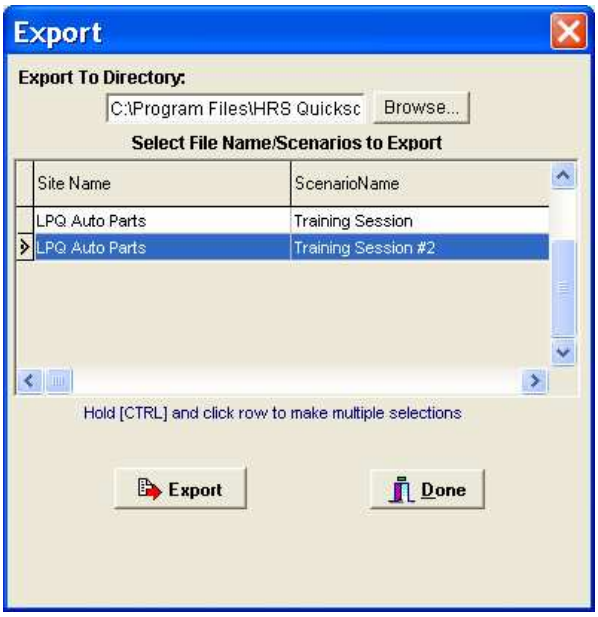


Figure 2-5

Make your selection and then use the **"Browse"** button to locate the empty folder that you had created earlier. Export your session files into the empty folder. Then, zip the folder for easy transportation via email or floppy disk.

2.3.2.2 How do I use the Delete option?

Click **"Delete"** on the system menu and you are presented with six options: *Entire Scenario, Ground Water, Surface Water OL, GW to SW, Soil,* and *Air*. Only the delete scenario option appears as a button located in the upper left corner of the HRS Summary Scoresheet.

The first option is "**Delete Scenario.**" The purpose of this button is to erase an existing scenario. The delete option removes the scenario that you are currently working on, so make sure that you are located in the scenario that you want to delete before you begin. If you want to delete a different scenario, you must open the scenario you want to delete. When you select **"Delete Scenario,"** you are presented with the warning message displayed in Figure 2-6.

Figure 2-6

Take this opportunity to confirm that this is the scenario that you want to delete. Select **"Yes"** to continue, and select **"No"** to cancel. If you select **"Yes"** and continue, you will be presented with the following confirmation message (Figure 2-7).

Figure 2-7

The remaining five options correspond to a specific pathway or component within a scenario. These buttons remove the corresponding pathway in the scenario you are currently working on. Make sure that you are located in the scenario where you want to delete the pathway before you begin. If you want to delete a pathway in a different scenario, you must open the scenario you want to change. When you select one of the pathways or components, you are presented with the warning message displayed in Figure 2-8.

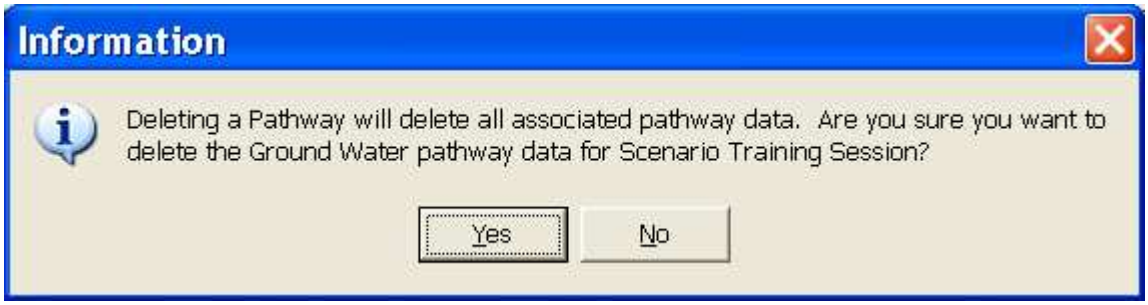


Figure 2-8

Take this opportunity to confirm that this is the pathway you want to delete. Select "**Yes**" to continue, and select "**No**" to cancel. If you select "**Yes**" and continue, you will then be presented with the following confirmation message (Figure 2-9).

Figure 2-9

2.3.2.3 What are my printing options within HRS Quickscore?

The second item on the system menu is Print. If you click on Print, you are presented with two types of documents:

1) **Blank HRS Scoresheets** (see Appendix A)
Use the blank scoresheets when you want to calculate HRS scores by hand or to guide the collection of the factor values. Blank scoresheets are also convenient to use with a site for which you have only one pathway being scored, but desire a copy of each pathway scoresheet for the documentation record. Blank scoresheets can be generated without creating a scenario and entering information. This option allows you to print all or selected pathway scoresheets.

2) **Final HRS Scoresheets** (see Appendix B)
Use the final scoresheets when you want to prepare a presentable copy for review or inclusion in your HRS reports. The final scoresheet reports information for a specific scenario. This option provides you with scoresheets that correspond only to entered information, and will not produce scoresheets for pathways that you have not included in your site.

Note: The "print" option is actually a "print to file" option. The output will be a WordPerfect or Microsoft Word file, not a hard copy printout. To get a printout on paper, just follow the standard procedures used to print a file in either WordPerfect or MS Word.

2.3.2.3.1 How do I print Blank HRS Scoresheets?

To print blank scoresheets, select "Blank Scoresheet" from the Print drop down menu. HRS Quickscore will ask you to specify which of the pathways you would like to print (Figure 2-10). Place a checkmark in the box beneath the pathway names to indicate which pathways you are selecting for printing.

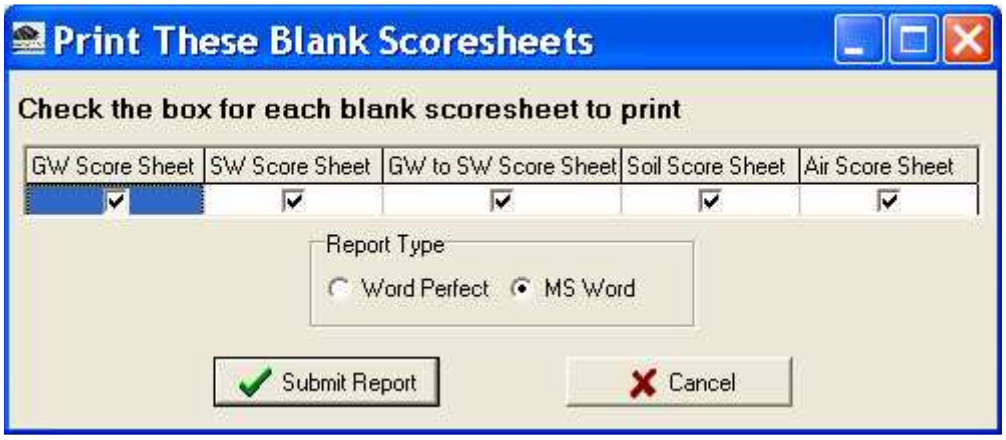


Figure 2-10

Also, select which report type in which you would like the scoresheets generated. HRS Quickscore generates its reports in two types of word processing software. These are WordPerfect and MS Word. To select the type of report you would like, click on the corresponding radio button (Figure 2-10). Select **"Submit Report"** to generate your Blank Scoresheets.

A preview of the report will appear on the screen (Figure 2-11).

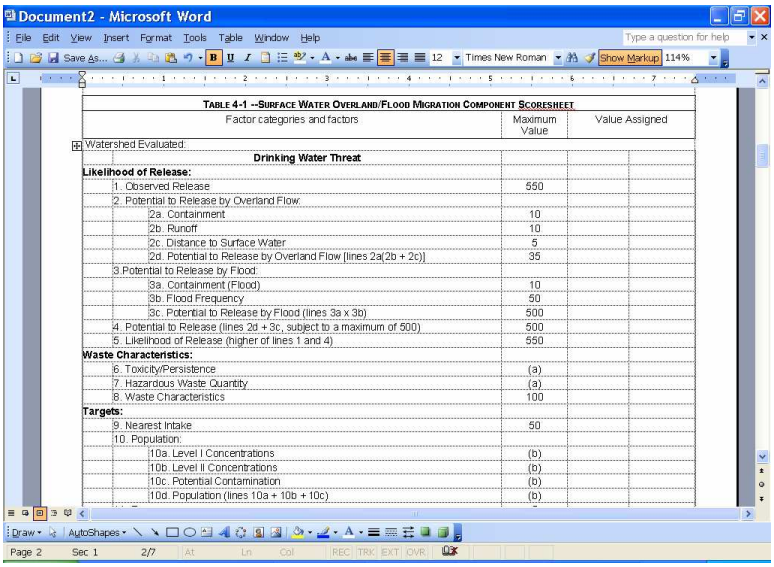


Figure 2-11

You can review and manipulate your information within WordPerfect or MS Word as you would any other word processing document.

2.3.2.3.2 How do I print Final HRS Scoresheets?

To print a final scoresheet, select the item from the Print drop down menu. You will be prompted to select the scenario and the type of report that you wish to print (Figure 2-12).

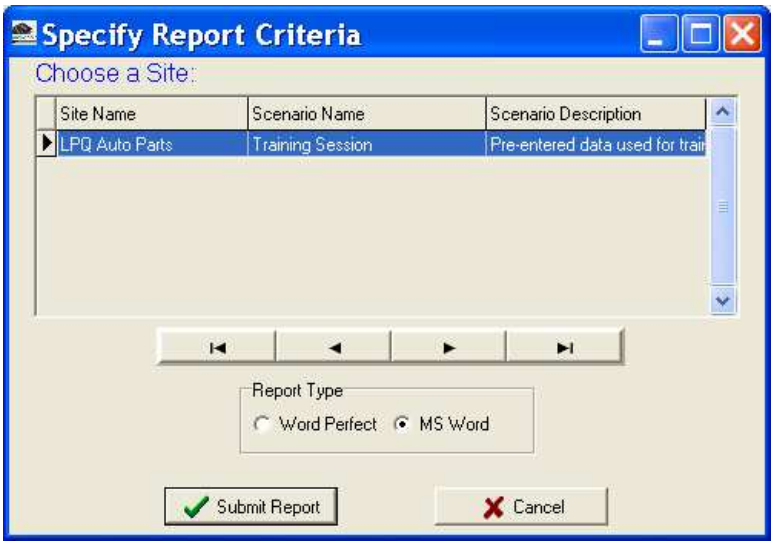


Figure 2-12

To print, click on the scenario and the report type, then click on **"Submit Report."**

A message will appear, as seen in Figure 2-13, reminding the user to verify the accuracy of the data to ensure a correct calculation of the site score.

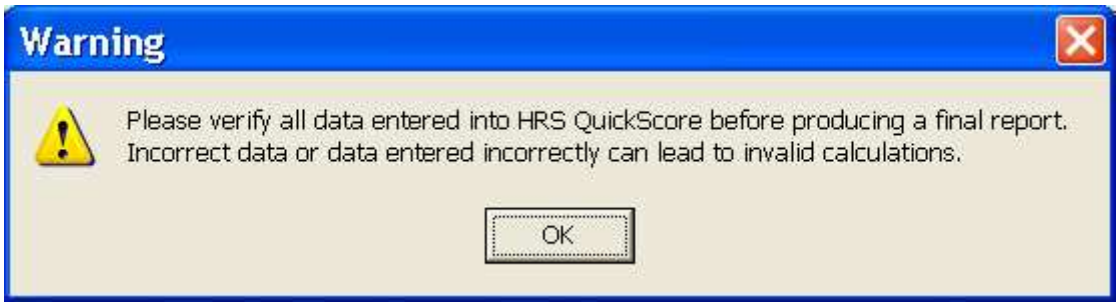


Figure 2-13

A preview of the report will appear. The same options and instructions apply to printing final scoresheets as those explained in Section 2.3.2.3.1.

2.3.2.4 What is the function of the scratch pad?

The scratch pad is designed to give you a quick and easy way to record and organize notes and ideas. You can make lists and check items off as they are completed. In addition, there is a column labeled Line No. designed to let you keep track of the line on the scoresheet that corresponds to each scratch pad note. The scratch pad also contains a column labeled Refs. to allow the user to enter related references for the data.

The scratch pad can be accessed from the summary screen or any of the pathway screens. When accessed from a pathway screen, you can enter notes related to that pathway specifically and only the entries for that pathway will be visible. When accessed from the summary screen, you can enter overall site notes. All scratch pad entries are visible when accessed from the summary screen, however, the pathway-specific entries will be designated by the pathway to which they relate.

To use this option, click on the scratch pad menu option on the top of the summary screen or pathway screen. The scratch pad screen will appear. Figure 2-14 displays the scratch pad accessed from the summary screen.

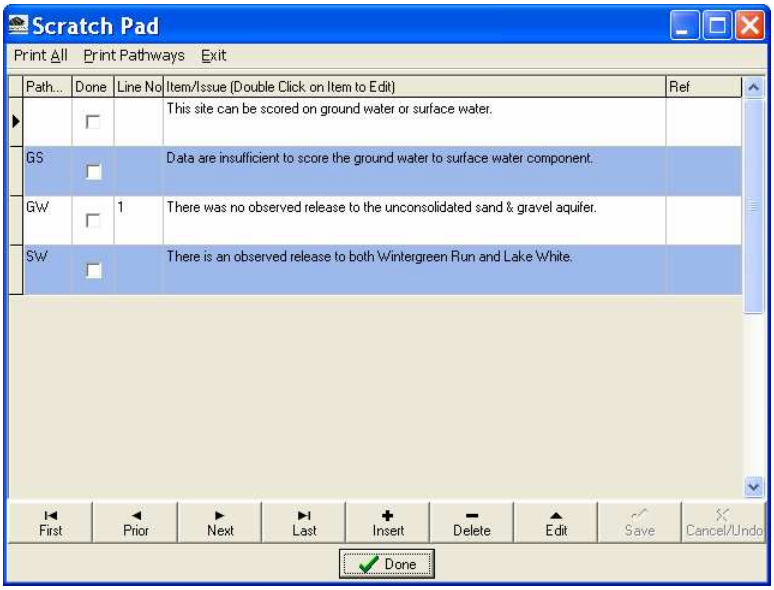


Figure 2-14

To enter an item into the scratch pad, double-click on the Item/Issue box. An entry screen will open. Enter the item on this screen and click **"Ok"** when finished. The item will then appear in the Item/Issue box.

To place a check in the check box, double-click on the box located in the done column. To remove the check, double click on the box again. You can view the items on the scratch pad straight from the computer screen, or they can be printed by selecting the Print menu item on this screen. A print preview will appear. Click on the Print icon and then click on **"Ok."** The page will be sent to the printer.

2.3.2.5 How do I use the Calculator Function?

The calculator function is available to help the user convert from one unit of measure to another. Frequently used units and the conversion factors associated with them are provided to the left of the calculator, as seen in Figure 2-15. The SCDM function can also be accessed from the menu at the top of the screen.

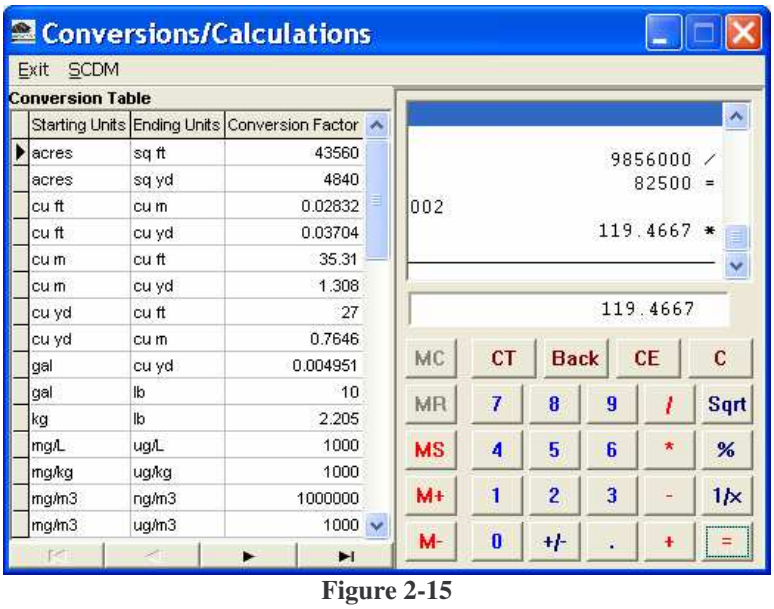


Figure 2-15

2.3.2.6 How do I use the SCDM function?

Quickscore 2.3 contains all SCDM values as of march 2006. This includes interim revised values for furfural, nitrobenzene, nitrosodimethlyamiine, N-, perchlorate, and trichloroethylene.

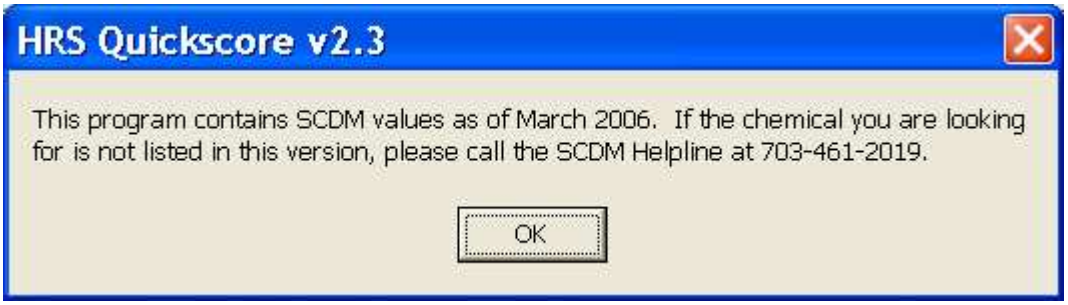
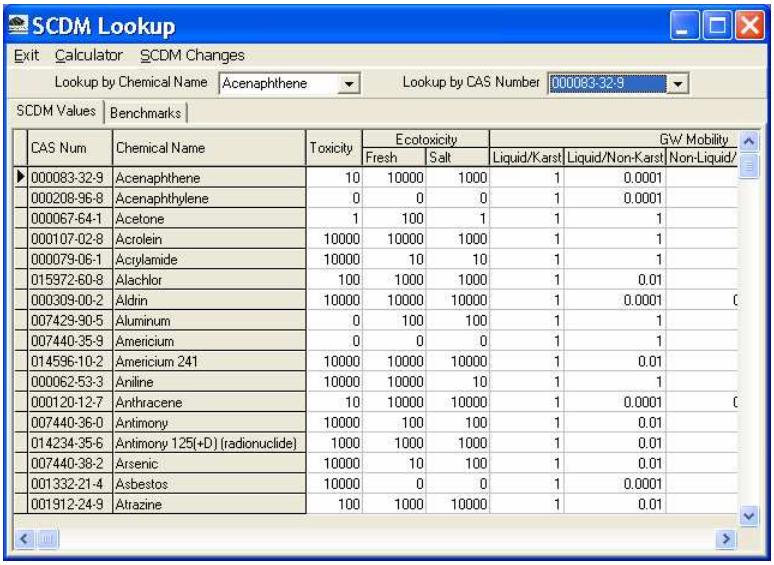


Figure 2-16

Selecting SCDM in the system menu will bring up a screen that will allow the user to search for and view SCDM values. The user may search by CAS number or by chemical name. To begin a search, the user should click on the downward arrow to the right of the lookup field to display the list box. The user can then scroll through the CAS numbers or chemical names and make a selection, or they can type the desired value into the lookup field. As the user types into the lookup field, the window will automatically advance to the chemical that is the closest match to what is being typed. Once the desired chemical has been chosen, the user may scroll to the right to see the desired values or enlarge the screen to view all the values at the same time. The calculator function can also be accessed from the menu at the top of the screen.



CAS Num	Chemical Name	Toxicity	Ecotoxicity		GW Mobility		
			Fresh	Salt	Liquid/Karst	Liquid/Non-Karst	Non-Liquid/
000083-32-9	Acenaphthene	10	10000	1000	1	0.0001	
000208-96-8	Acenaphthylene	0	0	0	1	0.0001	
000067-64-1	Acetone	1	100	1	1	1	
000107-02-8	Acrolein	10000	10000	1000	1	1	
000079-06-1	Acrylamide	10000	10	10	1	1	
015972-60-8	Alachlor	100	1000	1000	1	0.01	
000309-00-2	Aldrin	10000	10000	10000	1	0.0001	
007429-90-5	Aluminum	0	100	100	1	1	
007440-35-9	Americium	0	0	0	1	1	
014596-10-2	Americium 241	10000	10000	10000	1	0.01	
000062-53-3	Aniline	10000	10000	10	1	1	
000120-12-7	Anthracene	10	10000	10000	1	0.0001	
007440-36-0	Antimony	10000	100	100	1	0.01	
014234-35-6	Antimony 125(+D) (radionuclide)	1000	1000	1000	1	0.01	
007440-38-2	Arsenic	10000	10	100	1	0.01	
001332-21-4	Asbestos	10000	0	0	1	0.0001	
001912-24-9	Atrazine	100	1000	10000	1	0.01	

Figure 2-17

Another choice from the menu is SCDM Changes. This option brings up a window that displays the list of hazardous substances for which values have been revised since the January 2004 version of SCDM. If you have questions about the SCDM values, or need to use a hazardous substance that is not currently listed in SCDM, please call the SCDM Helpline at 703-461-2019.

2.3.2.7 How do I use the About and Exit options?

Selecting About from the HRS Quickscore menu, located at the top of the summary screen, will display the HRS Quickscore version and contact information. This screen can be exited by clicking your mouse on another part of the screen, or it will automatically disappear after approximately 50 seconds.

Selecting Exit from the menu will close HRS Quickscore.

2.3.2.8 How do I use the Help function?

Selecting Help from the HRS Quickscore menu, will display an electronic version of the HRS Quickscore User's Guide. An index will be located on the left side of the screen. Also included is a table of general program information and a list of acronyms and abbreviations. When viewing pathway or summary scoresheet screen, help about a specific topic may also be accessed by double clicking the item in question.

2.3.3 How do I navigate within HRS Quickscore?

On each screen within HRS Quickscore, navigation buttons can be found on the bottom of the screen. The HRS Summary Scoresheet screen has **"First," "Prior," "Next,"** and **"Last"** to move between all scenarios that you have entered. The HRS Summary Scoresheet also has **"Edit," "Save,"** and **"Cancel/Undo." "Edit"** will allow you to edit information that can be entered (you can also edit the information by putting the cursor in the box that you wish to edit). **"Save"** will save each new item/issue that you type and **"Cancel/Undo"** will undo any typing since the last save. The Pathway Scoresheet screens also have all of these same buttons and, in addition, the pathway scoresheet screens have **"Insert"** and **"Delete"** that allow you to insert or delete entries within a scenario (e.g., another aquifer). The Scratch Pad screen contains all of these buttons.

Note: As with the save function in the system menu, you will rarely have to use the Edit and Save buttons of the navigation bar. Quickscore automatically saves your data when you exit a field by tabbing or using your mouse to click on another field.

3.0 Scoring a Site

3.1 How do I calculate a site score using HRS Quickscore?

You can calculate the site score using one of two methods. One method is to enter pathway values directly into the HRS Summary Scoresheet screen (Figure 3-1).

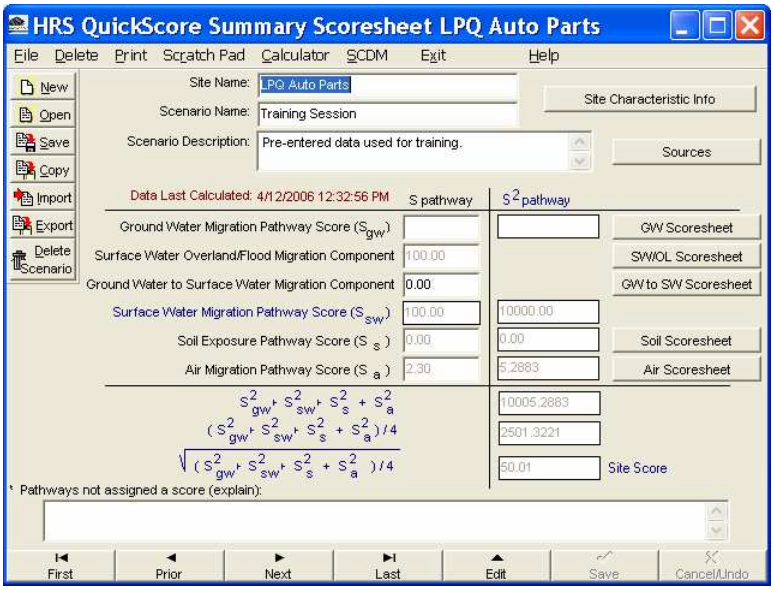


Figure 3-1

HRS Quickscore will automatically calculate the site score as pathway values are entered. This method is best used from a new, blank session as it is intended to allow the user to see what combination of pathway scores will yield certain site scores (e.g., at or above the 28.50 cutoff). Once information has been entered into the pathway scoresheets, the pathway scores become calculated fields and cannot be changed.

The second method is to enter the detailed factor values into each specific pathway scoresheet. HRS Quickscore will calculate the pathway value and automatically enter the calculated pathway score into the summary screen and calculate a site score from this data.

If you choose, you may complete the HRS Summary Scoresheet screen as part of your final scoresheet preparation. At the top of the screen there are fields for vital information such as site name, scenario name, and scenario description. This information is helpful in documenting the scenario or score calculation conditions of interest.

The red text below the scenario description field will give the date and time of the most recent calculation or data modification.

Note: As a safeguard, once you begin entering detailed data into specific pathways, HRS Quickscore will no longer permit you to enter values for the same pathway onto the summary screen.

3.2 How do I enter source information?

Source information is entered by clicking on the "Sources" button from the summary screen and accessing the Sources screen shown in Figure 3-2.

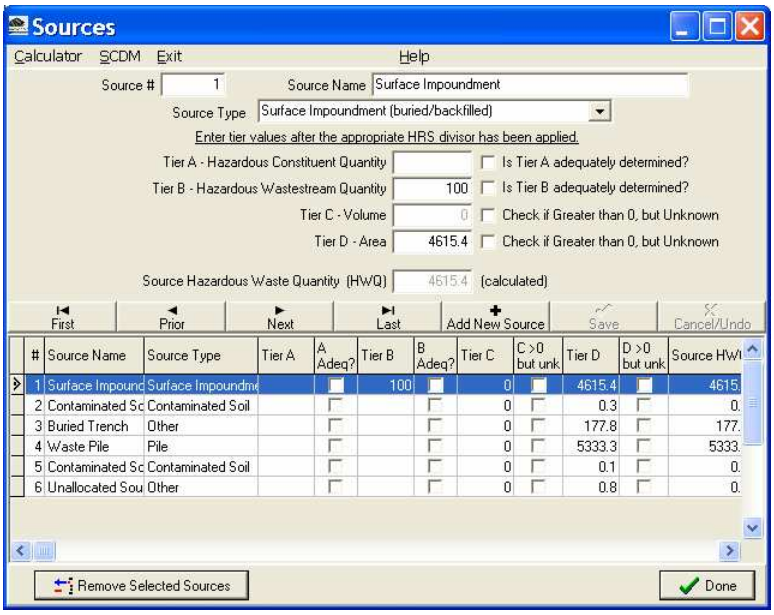


Figure 3-2

To add a source, click on the **"Add New Source"** button. All the fields will clear except the *Source #* field. HRS Quickscore will automatically number and order the sources as you enter them.

The values entered for each tier must be the calculated values AFTER the appropriate HRS divisor has been applied, either from HRS Table 2-5 for the migration pathways or HRS Table 5-2 for the soil exposure pathway. HRS Quickscore will select the highest tier value to assign as the hazardous waste quantity for that source.

3.3 How do I use the pathway scoresheets?

Each pathway has its own scoresheet. You may access pathway scoresheets through the summary screen by clicking on the appropriate pathway button. The sources and pathway buttons can be found on the right hand side of the HRS Summary Scoresheet screen (Figure 3-1). Specifically, **"GW Scoresheet," "SW/OL Scoresheet," "GW to SW Scoresheet," "Soil Scoresheet," and "Air Scoresheet"** provide you with access to the individual HRS Scoresheets for these pathways. **"Sources"** provides access to data entry for source information. In the example site named LPQ Auto Parts, Training Session, the soil exposure pathway has been evaluated. Figure 3-2 shows the ground water migration pathway scoresheet.

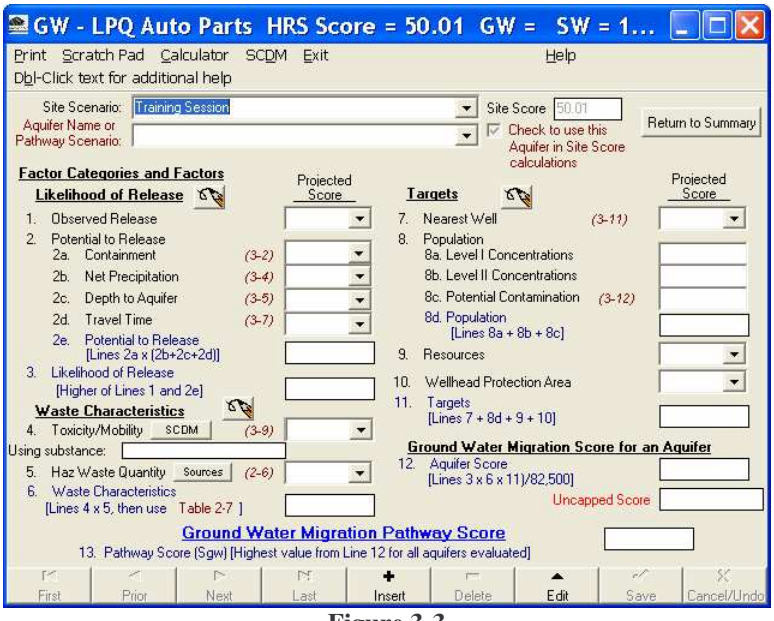


Figure 3-3

As mentioned in Section 2.2, the fields with blackened labels are areas where you may enter a value. In most cases where there are discrete factor values (e.g., containment, likelihood of exposure, resources, etc.) there is a drop down list from which to select a value. The drop down lists also contain the text from the HRS table to aid selection. The fields with blue labels are areas where HRS Quickscore will calculate and display the calculated value; you cannot enter values into these fields.

Note: The maroon italicized numbers at the end of many of the factor value lines (e.g., (2-6) *after line 3 Hazardous Waste Quantity) refers to the table in the HRS that corresponds to that particular factor value. To access the table in the HRS, simply double-click on the maroon table number.*

The very last field, which is in red, is the uncapped pathway score. This is helpful when evaluating different scenarios. The uncapped score illustrates the true pathway or threat score before it is capped at 100 (or 60 for environmental targets). This information tells you how much latitude is available to adjust scoring factor values and still achieve a maximum score.

Several different scenarios can be created for the same site. By using the buttons at the bottom of the Pathway screen, you can insert a new pathway scenario screen, navigate between several different scenarios, Edit, Delete, Save, and Cancel. It should be noted, however, that only one pathway or threat scenario can be used for scoring purposes. To designate a current scenario to be used in the site score, place a check in the "Check to use this Scenario in Site Score calculations" box located at the top of the Pathway screen.

HRS Quickscore keeps a list of the pathway scores in the window title bar (the top line of each screen). As seen in Figure 3-3, the title bar contains the total HRS score, which in this case is 71.72. It also contains each individual pathway score. The title bar is refreshed with each new change.

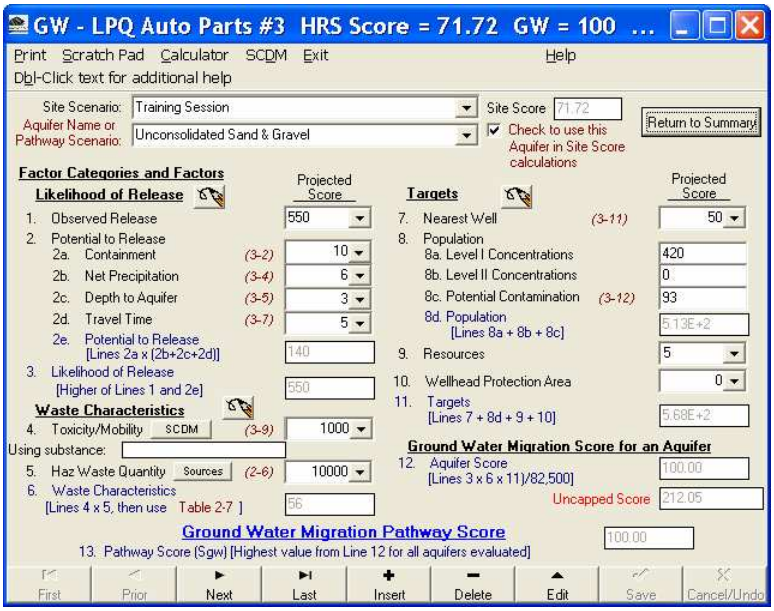


Figure 3-4

HRS Quickscore uses scientific notation to display any value that would otherwise be too large or small to fit in the display area.

Scoresheet calculation occurs when you place the cursor in another data entry field, either by tabbing, clicking with the mouse or pressing enter. Data is automatically saved after every calculation.

Select **"Return to Summary"** to go back to the HRS Summary Scoresheet screen and perform additional actions (e.g., select another pathway or start a new site or scenario).

SCDM values can be entered directly into the appropriate fields on the pathway scoresheet, or by selecting the hazardous substances in SCDM. To access the SCDM selection screen, click on the **"SCDM"** button under Waste Characteristics. Then select the hazardous substances associated with your site from the drop down list at the top of the screen and provide the relevant pathway-specific information. Once all the information is entered for a hazardous substance, click the **"Add**

Substance" button. This adds the substance to the list of hazardous substances to be scored, and HRS Quickscore automatically does the calculation for you.

The highest calculated value will appear in red in the list of hazardous substances. HRS Quickscore will automatically populate the SCDM-driven factor value fields on the pathway scoresheet and will display the name of the hazardous substance used for the calculation. If more than one hazardous substance meets the criteria for the highest value, then HRS Quickscore will display on the pathway scoresheet the name of the hazardous substance meeting the criteria that comes first alphabetically.

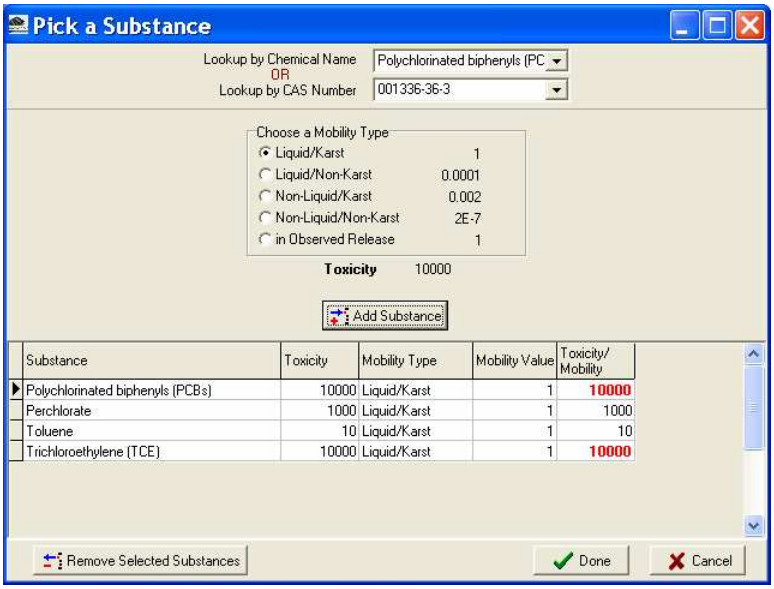


Figure 3-5

The Hazardous Waste Quantity factor value can be entered directly into the pathway scoresheet, or can be calculated by HRS Quickscore based on the information that you entered from the summary screen using the **"Sources"** button. To have HRS Quickscore do the calculation for you, click on the **"Sources"** button that appears next to the Hazardous Waste Quantity field on the pathway scoresheet. This will bring up a screen from which you can associate the appropriate source hazardous waste quantity values with the pathway, see Figure 3-5. To associate sources, highlight the source name at the top of the screen and click the **"Add Selected Sources to Pathway"** button. The source(s) will appear in the table at the bottom of the screen and the hazardous waste quantity for that source will be counted toward the Hazardous Waste Quantity factor value for the pathway.

HRS Quickscore automatically checks the box in the Containment >0 column, indicating that the hazardous substances in that source are available to the pathway. If you uncheck the box by clicking in it, that source hazardous waste quantity will not be included in the pathway calculation.

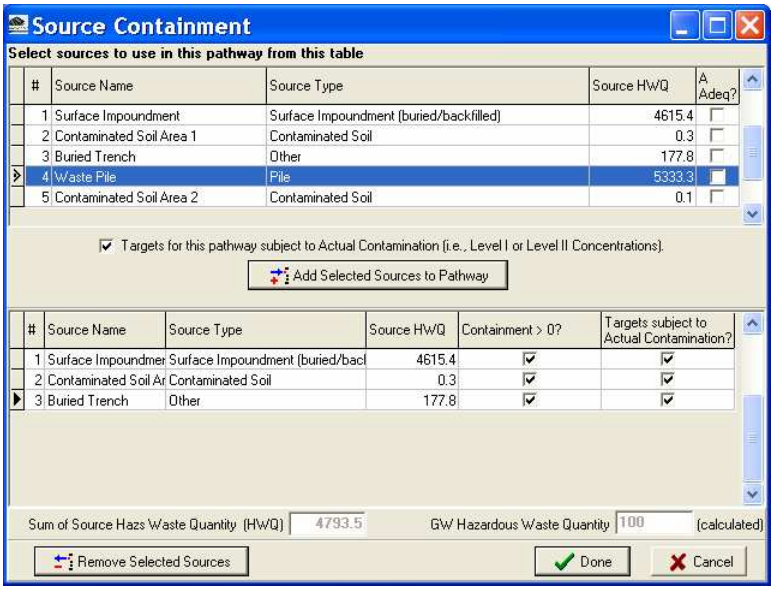


Figure 3-6

The calculated pathway hazardous waste quantity factor value is displayed at the bottom of the screen, and is automatically filled into the pathways scoresheet.

3.4 Are there any differences between HRS scoresheets and those within HRS Quickscore?

Yes. The scoresheets throughout HRS Quickscore mimic the HRS. The exception is located within the surface water pathway — the overland/flood migration component and the ground water to surface water component. Within the human food chain threat and the environmental threat of the two surface water migration routes, the toxicity/persistence/bioaccumulation and ecosystem toxicity/persistence/bioaccumulation factor values are divided into their separate components. The first field is the *toxicity/persistence value*. The second field is the *bioaccumulation value*. This information must be entered separately into HRS Quickscore. The toxicity/persistence/bioaccumulation factor is calculated automatically from the data entered for the two fields. Please note that this occurs in both the human food chain and environmental threats of surface water of the overland flow/flood and the ground water to surface water components of the surface water pathway. These values can be obtained from the SCDM option in the system menu.

3.5 How do I enter Site Characteristics Information?

Whether or not to enter Site Characteristics information is your choice. Many of these items are required for the submission of a Final HRS Scoresheet. However, you do not need to complete this information to obtain a score. If desired, you can enter Site Information by clicking on **"Site Characteristics Info"** located on the HRS Summary Screen. The Site Information screen (Figure 3-4) will appear.

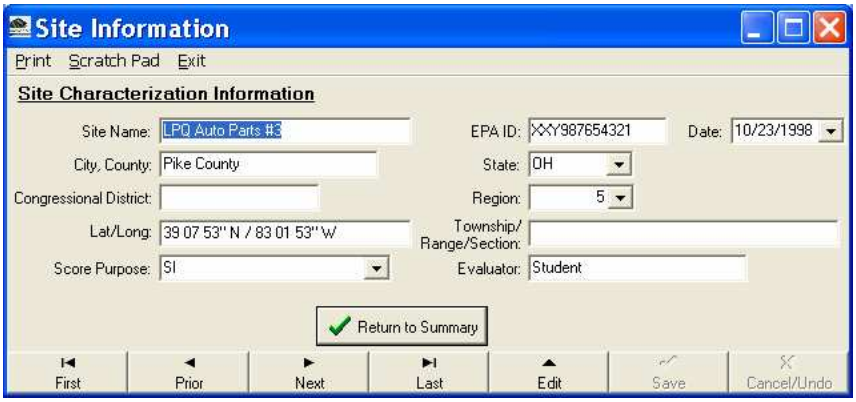


Figure 3-7

This screen contains fields for the *Site Name, City and County, Congressional District, Latitude and Longitude, Township/Range/Section, Scoring Purpose, EPA ID, State, EPA Region, Date,* and the *Evaluator*. The *Scoring Purpose, State, Region,* and *Date* fields have pick lists to choose values from. Figure 3-4 shows a sample scenario containing some site information.

Appendix A

Printout of Blank HRS Scoresheets

****** CONFIDENTIAL ******
******PRE-DECISIONAL DOCUMENT ******
****** SUMMARY SCORESHEET ******
****** FOR COMPUTING PROJECTED HRS SCORE ******

****** Do Not Cite or Quote ******

Site Name: Region:

City, County, State: Evaluator:

EPA ID#: Date:

Lat/Long: T/R/S:

Congressional District:

This Scoresheet is For:

Scenario Name:

Description:

	S^2 pathway	S^2 pathway
Ground Water Migration Pathway Score (S_{gw})		
Surface Water Migration Pathway Score (S_{sw})		
Soil Exposure Pathway Score (S_s)		
Air Migration Score (S_a)		
$S^2_{gw} + S^2_{sw} + S^2_s + S^2_a$		
$(S^2_{gw} + S^2_{sw} + S^2_s + S^2_a)/4$		
$\sqrt{(S^2_{gw} + S^2_{sw} + S^2_s + S^2_a)/4}$		

* Pathways not assigned a score (explain):

TABLE 3-1 —GROUND WATER MIGRATION PATHWAY SCORESHEET

Factor Categories and Factors	Maximum Value	Value Assigned
Aquifer Evaluated:		
Likelihood of Release to an Aquifer:		
1. Observed Release	550	
2. Potential to Release:		
2a. Containment	10	
2b. Net Precipitation	10	
2c. Depth to Aquifer	5	
2d. Travel Time	35	
2e. Potential to Release [lines 2a(2b + 2c + 2d)]	500	
3. Likelihood of Release (higher of lines 1 and 2e)	550	
Waste Characteristics:		
4. Toxicity/Mobility	(a)	
5. Hazardous Waste Quantity	(a)	
6. Waste Characteristics	100	
Targets:		
7. Nearest Well	(b)	
8. Population:		
8a. Level I Concentrations	(b)	
8b. Level II Concentrations	(b)	
8c. Potential Conamination	(b)	
8d. Population (lines 8a + 8b + 8c)	(b)	
9. Resources	5	
10. Wellhead Protection Area	20	
11. Targets (lines 7 + 8d + 9 + 10)	(b)	
Ground Water Migration Score for an Aquifer:		
12. Aquifer Score [(lines 3 x 6 x 11)/82,5000][c]	100	
Ground Water Migration Pathway Score:		
13. Pathway Score (S_{gw}), (highest value from line 12 for all aquifers evalueated)[c]	100	

[a] Maximum value applies to waste characteristcs category
[b] Maximum value not applicable
[c] Do not round to nearest integer

TABLE 4-1 —SURFACE WATER OVERLAND/FLOOD MIGRATION COMPONENT SCORESHEET

Factor Categories and Factors	Maximum Value	Value Assigned
Watershed Evaluated:		
Drinking Water Threat		
Likelihood of Release:		
1. Observed Release	550	
2. Potential to Release by Overland Flow:		
2a. Containment	10	
2b. Runoff	10	
2c. Distance to Surface Water	5	
2e. Potential to Release by Overland Flow [lines 2a(2b + 2c)]	35	
3. Potential to Release by Flood		
3a. Containment (Flood)	10	
3b. Flood Frequency	50	
3c. Potential to Release by Flood (lines 3a x 3b)	500	
4. Potential to Release (lines 2d + 3c, subject to a maximum of 500)	500	
5. Likelihood of Release (higher of liines 1 and 4)	550	
Waste Characteristics:		
6. Toxicity/Persistence	(a)	
7. Hazardous Waste Quantity	(a)	
8. Waste Characteristics	100	
Targets:		
9. Nearest Intake	50	
10. Population:		
10a. Level I Concentrations	(b)	
10b. Level II Concentrations	(b)	
10c. Potential Conamination	(b)	
10d. Population (lines 10a + 10b + 10c)	(b)	
11. Resources	5	
12. Targets (lines 9 + 10d + 11)	(b)	
Drinking Water Threat Score:		
13. Drinking Water Threat Score [(lines 5x8x12)/82,5000, subject to a max of 100]	100	
Human Food Chain Threat		
Likelihood of Release:		
14. Likelihood of Release (same value as line 5)	550	
Waste Characteristics:		
15. Toxicity/Persistence/Bioaccumulation	(a)	
16. Hazardous Waste Quantity	(a)	
17. Waste Characteristics	1000	

Targets:	
18. Food Chain Individual	50
19. Population	
19a. Level I Concentration	(b)
19b. Level II Concentration	(b)
19c. Potential Human Food Chain Contamination	(b)
19d. Population (lines 19a + 19b + 19c)	(b)
20. Targets (lines 18 + 19d)	(b)
Human Food Chain Threat Score:	
21. Human Food Chain Threat Score [(lines 14x17x20)/82500, subject to max of 100]	100
Environmental Threat	
Likelihood of Release:	
22. Likelihood of Release (same value as line 5)	550
Waste Characteristics:	
23. Ecosystem Toxicity/Persistence/Bioaccumulation	(a)
24. Hazardous Waste Quantity	(a)
25. Waste Characteristics	1000
Targets:	
26. Sensitive Environments	
26a. Level I Concentrations	(b)
26b. Level II Concentrations	(b)
26c. Potential Contamination	(b)
26d. Sensitive Environments (lines 26a + 26b + 26c)	(b)
27. Targets (value from line 26d)	(b)
Environmental Threat Score:	
28. Environmental Threat Score [(lines 22x25x27)/82,500 subject to a max of 60]	60
Surface Water Overland/Flood Migration Component Score for a Watershed	
29. Watershed Score[c] (lines 13+21+28, subject to a max of 100}	100
Surface Water Overland/Flood Migration Component Score	
30. Component Score (S_{sw})[c] (highest score from line 29 for all watersheds evaluated)	100

[a] Maximum value applies to waste characteristcs category
[b] Maximum value not applicable
[c] Do not round to nearest integer

TABLE 4-25 —GROUND WATER TO SURFACE WATER MIGRATION COMPONENT SCORESHEET

Factor Categories and Factors	Maximum Value	Value Assigned
Aquifer Evaluated:		
Drinking Water Threat		
Likelihood of Release to an Aquifer:		
1. Observed Release	550	
2. Potential to Release:		
2a. Containment	10	
2b. Net Precipitation	10	
2c. Depth to Aquifer	5	
2d. Travel Time	35	
2e. Potential to Release [lines 2a(2b + 2c + 2d)]	500	
3. Likelihood of Release (higher of lines 1 and 2e)	550	
Waste Characteristics:		
4. Toxicity/Mobility	(a)	
5. Hazardous Waste Quantity	(a)	
6. Waste Characteristics	100	
Targets:		
7. Nearest Well	(b)	
8. Population:		
8a. Level I Concentrations	(b)	
8b. Level II Concentrations	(b)	
8c. Potential Contamination	(b)	
8d. Population (lines 8a + 8b + 8c)	(b)	
9. Resources	5	
10. Targets (lines 7 + 8d + 9)	(b)	
Drinking Water Threat Score:		
11. Drinking Water Threat Score ([lines 3 x 6 x 10]/ 82,500, subject to max of 100)	100	
Human Food Chain Threat		
Likelihood of Release:		
12. Likelihood of Release (same value as line 3)	550	
Waste Characteristics:		
13. Toxicity/Mobility/Persistence/Bioaccumulation	(a)	
14. Hazardous Waste Quantity	(a)	
15. Waste Characteristics	1000	
Targets:		
16. Food Chain Individual	50	
17. Population		
17a. Level I Concentration	(b)	
17b. Level II Concentration	(b)	
17c. Potential Human Food Chain Contamination	(b)	
17d. Population (lines 17a + 17b + 17c)	(b)	
18. Targets (lines 16 + 17d)	(b)	

Human Food Chain Threat Score:	
19. Human Food Chain Threat Score [(lines 12x15x18)/ 82,500,suject to max of 100]	100
Environmental Threat	
Likelihood of Release:	
20. Likelihood of Release (same value as line 3)	550
Waste Characteristics:	
21. Ecosystem Toxicity/Persistence/Bioaccumulation	(a)
22. Hazardous Waste Quantity	(a)
23. Waste Characteristics	1000
Targets:	
24. Sensitive Environments	
24a. Level I Concentrations	(b)
24b. Level II Concentrations	(b)
24c. Potential Contamination	(b)
24d. Sensitive Environments (lines 24a + 24b + 24c)	(b)
25. Targets (value from line 24d)	(b)
Environmental Threat Score:	
26. Environmental Threat Score [(lines 20x23x25)/82,500 subject to a max of 60]	60
Ground Water to Surface Water Migration Component Score for a Watershed	
27. Watershed Score[c] (lines 11 + 19 + 28, subject to a max of 100)	100
28. Component Score (S_{gs})[c] (highest score from line 27 for all watersheds evaluated, subject to a max of 100)	100

[a] Maximum value applies to waste characteristics category
[b] Maximum value not applicable
[c] Do not round to nearest integer

TABLE 5-1 —SOIL EXPOSURE PATHWAY SCORESHEET

Factor Categories and Factors	Maximum Value	Value Assigned
Likelihood of Exposure:	550	
1. Likelihood of Exposure		
Waste Characteristics:		
2. Toxicity	(a)	
3. Hazardous Waste Quantity	(a)	
4. Waste Characteristics	100	
Targets:		
5. Resident Individual	50	
6. Resident Population:		
6a. Level I Concentrations	(b)	
6b. Level II Concentrations	(b)	
6c. Population (lines 6a + 6b)	(b)	
7. Workers	15	
8. Resources	5	
9. Terrestrial Sensitive Environments	(c)	
10. Targets (lines 5 + 6c + 7 + 8 + 9)	(b)	
Resident Population Threat Score		
11. Resident Population Threat Score (lines 1 x 4 x 10)	(b)	
Nearby Population Threat		
Likelihood of Exposure:		
12. Attractiveness/Accessibility	100	
13. Area of Contamination	100	
14. Likelihood of Exposure	500	
Waste Characteristics:		
15. Toxicity	(a)	
16. Hazardous Waste Quantity	(a)	
17. Waste Characteristics	100	
Targets:		
18. Nearby Individual	1	
19. Population Within 1 Mile	(b)	
20. Targets (lines 18 + 19)	(b)	
Nearby Population Threat Score		
21. Nearby Population Threat (lines 14 x 17 x 20)	(b)	
Soil Exposure Pathway Score:		
22. Pathway Score[d] (S_s), [lines (11+21)/82,500, subject to max of 100]	100	

[a] Maximum value applies to waste characteristics category
[b] Maximum value not applicable
[c] No specific maximum value applies to factor. However, pathway score based solely on terrestrial sensitive environments is limited to a maximum of 60
[d] Do not round to nearest integer

TABLE 6-1 —AIR MIGRATION PATHWAY SCORESHEET

Factor Categories and Factors	Maximum Value	Value Assigned
Likelihood of Release:		
1. Observed Release	550	
2. Potential to Release:		
2a. Gas Potential to Release	500	
2b. Particulate Potential to Release	500	
2c. Potential to Release (higher of lines 2a and 2b)	500	
3. Likelihood of Release (higher of lines 1 and 2c)	550	
Waste Characteristics:		
4. Toxicity/Mobility	(a)	
5. Hazardous Waste Quantity	(a)	
6. Waste Characteristics	100	
Targets:		
7. Nearest Individual	50	
8. Population:		
8a. Level I Concentrations	(b)	
8b. Level II Concentrations	(b)	
8c. Potential Contamination	(c)	
8d. Population (lines 8a + 8b + 8c)	(b)	
9. Resources	5	
10. Sensitive Environments:		
10a. Actual Contamination	(c)	
10b. Potential Contamination	(c)	
10c. Sensitive Environments (lines 10a + 10b)	(c)	
11. Targets (lines 7 + 8d + 9 + 10c)	(b)	
Air Migration Pathway Score:		
12. Pathway Score (S_a) [(lines 3 x 6 x 11)/82,500][d]	100	

[a] Maximum value applies to waste characteristics category
[b] Maximum value not applicable
[c] No specific maximum value applies to factor. However, pathway score based solely on sensitive environments is limited to a maximum of 60.
[d] Do not round to nearest integer

Appendix B

Example Printout of Final HRS Scoresheets

****** CONFIDENTIAL ******
******PRE-DECISIONAL DOCUMENT ******
****** SUMMARY SCORESHEET ******
****** FOR COMPUTING PROJECTED HRS SCORE ******

****** Do Not Cite or Quote ******

Site Name: LPQ Auto Parts

City, County, State: Pike County OH

EPA ID#: XXY987654321

Lat/Long: 39 07 53" N / 83 01 53" W

Congressional District:

This Scoresheet is For: SI

Scenario Name: Training Session

Description: Pre-entered dat used for training.

Region: 5

Evaluator: Student

Date: 10/23/1998

T/R/S:

	S^2 pathway	S^2 pathway
Ground Water Migration Pathway Score (S_{gw})	100	10000
Surface Water Migration Pathway Score (S_{sw})	100	10000
Soil Exposure Pathway Score (S_s)	23.68	560.7424
Air Migration Score (S_a)	4.08824242424242	16.7137261193755
$S^2_{gw} + S^2_{sw} + S^2_s + S^2_a$		20577.4561
$(S^2_{gw} + S^2_{sw} + S^2_s + S^2_a)/4$		5144.364025
$\sqrt{(S^2_{gw} + S^2_{sw} + S^2_s + S^2_a)/4}$		71.72

* Pathways not assigned a score (explain):

TABLE 3-1 —GROUND WATER MIGRATION PATHWAY SCORESHEET

Factor Categories and Factors	Maximum Value	Value Assigned	
Aquifer Evaluated:			
Likelihood of Release to an Aquifer:			
1. Observed Release	550	550	
2. Potential to Release:			
2a. Containment	10	10	
2b. Net Precipitation	10	6	
2c. Depth to Aquifer	5	3	
2d. Travel Time	35	5	
2e. Potential to Release [lines 2a(2b + 2c + 2d)]	500	140	
3. Likelihood of Release (higher of lines 1 and 2e)	550		550
Waste Characteristics:			
4. Toxicity/Mobility	(a)	1000	
5. Hazardous Waste Quantity	(a)	10000	
6. Waste Characteristics	100		56
Targets:			
7. Nearest Well	(b)	50	
8. Population:			
8a. Level I Concentrations	(b)	420	
8b. Level II Concentrations	(b)	0	
8c. Potential Conamination	(b)	93	
8d. Population (lines 8a + 8b + 8c)	(b)	513	
9. Resources	5	5	
10. Wellhead Protection Area	20	0	
11. Targets (lines 7 + 8d + 9 + 10)	(b)		568
Ground Water Migration Score for an Aquifer:			
12. Aquifer Score [(lines 3 x 6 x 11)/82,5000][c]	100		100.00
Ground Water Migration Pathway Score:			
13. Pathway Score (S_{gw}), (highest value from line 12 for all aquifers evalueated)[c]	100		100.00

[a] Maximum value applies to waste characteristcs category
[b] Maximum value not applicable
[c] Do not round to nearest integer

TABLE 4-1 —SURFACE WATER OVERLAND/FLOOD MIGRATION COMPONENT SCORESHEET

Factor Categories and Factors	Maximum Value	Value Assigned	
Watershed Evaluated:			
Drinking Water Threat			
Likelihood of Release:			
1. Observed Release	550	550	
2. Potential to Release by Overland Flow:			
2a. Containment	10	10	
2b. Runoff	10	7	
2c. Distance to Surface Water	5	20	
2e. Potential to Release by Overland Flow [lines 2a(2b + 2c)]	35	270	
3. Potential to Release by Flood			
3a. Containment (Flood)	10	10	
3b. Flood Frequency	50	25	
3c. Potential to Release by Flood (lines 3a x 3b)	500	250	
4. Potential to Release (lines 2d + 3c, subject to a maximum of 500)	500	500	
5. Likelihood of Release (higher of liines 1 and 4)	550		550
Waste Characteristics:			
6. Toxicity/Persistence	(a)	10000	
7. Hazardous Waste Quantity	(a)	10000	
8. Waste Characteristics	100		100
Targets:			
9. Nearest Intake	50	0	
10. Population:			
10a. Level I Concentrations	(b)	0	
10b. Level II Concentrations	(b)	0	
10c. Potential Conamination	(b)	0	
10d. Population (lines 10a + 10b + 10c)	(b)	0	
11. Resources	5	5	
12. Targets (lines 9 + 10d + 11)	(b)		5
Drinking Water Threat Score:			
13. Drinking Water Threat Score [(lines 5x8x12)/82,5000, subject to a max of 100]	100		3.33
Human Food Chain Threat			
Likelihood of Release:			
14. Likelihood of Release (same value as line 5)	550		550
Waste Characteristics:			
15. Toxicity/Persistence/Bioaccumulation	(a)	500000000	
16. Hazardous Waste Quantity	(a)	10000	
17. Waste Characteristics	1000		1000

Targets:			
18. Food Chain Individual	50	50	
19. Population			
19a. Level I Concentration	(b)	0.6	
19b. Level II Concentration	(b)	6	
19c. Potential Human Food Chain Contamination	(b)	0.3106	
19d. Population (lines 19a + 19b + 19c)	(b)	3.91	
20. Targets (lines 18 + 19d)	(b)		53.9
Human Food Chain Threat Score:			
21. Human Food Chain Threat Score [(lines 14x17x20)/82500, subject to max of 100]	100		100
Environmental Threat			
Likelihood of Release:			
22. Likelihood of Release (same value as line 5)	550		550
Waste Characteristics:			
23. Ecosystem Toxicity/Persistence/Bioaccumulation	(a)	500000000	
24. Hazardous Waste Quantity	(a)	10000	
25. Waste Characteristics	1000		1000
Targets:			
26. Sensitive Environments			
26a. Level I Concentrations	(b)	0	
26b. Level II Concentrations	(b)	30	
26c. Potential Contamination	(b)	2	
26d. Sensitive Environments (lines 26a + 26b + 26c)	(b)	32	
27. Targets (value from line 26d)	(b)		32
Environmental Threat Score:			
28. Environmental Threat Score [(lines 22x25x27)/82,500 subject to a max of 60]	60		60
Surface Water Overland/Flood Migration Component Score for a Watershed			
29. Watershed Score[c] (lines 13+21+28, subject to a max of 100}	100		100
Surface Water Overland/Flood Migration Component Score			
30. Component Score (S_{sw})[c] (highest score from line 29 for all watersheds evaluated)	100		100

[a] Maximum value applies to waste characteristcs category
[b] Maximum value not applicable
[c] Do not round to nearest integer

TABLE 5-1 —SOIL EXPOSURE PATHWAY SCORESHEET

Factor Categories and Factors	Maximum Value	Value Assigned	
Likelihood of Exposure:	550		550
1. Likelihood of Exposure			
Waste Characteristics:			
2. Toxicity	(a)	1000	
3. Hazardous Waste Quantity	(a)	100	
4. Waste Characteristics	100		32
Targets:			
5. Resident Individual	50	50	
6. Resident Population:			
6a. Level I Concentrations	(b)	56	
6b. Level II Concentrations	(b)	0	
6c. Population (lines 6a + 6b)	(b)	56	
7. Workers	15	5	
8. Resources	5	0	
9. Terrestrial Sensitive Environments	(c)	0	
10. Targets (lines 5 + 6c + 7 + 8 + 9)	(b)		111
Resident Population Threat Score			
11. Resident Population Threat Score (lines 1 x 4 x 10)	(b)		1953600
Nearby Population Threat			
Likelihood of Exposure:			
12. Attractiveness/Accessibility	100	10	
13. Area of Contamination	100	20	
14. Likelihood of Exposure	500		5
Waste Characteristics:			
15. Toxicity	(a)	10000	
16. Hazardous Waste Quantity	(a)	100	
17. Waste Characteristics	100		32
Targets:			
18. Nearby Individual	1	0	
19. Population Within 1 Mile	(b)	47	
20. Targets (lines 18 + 19)	(b)		0.47
Nearby Population Threat Score			
21. Nearby Population Threat (lines 14 x 17 x 20)	(b)		75.2
Soil Exposure Pathway Score:			
22. Pathway Score[d] (S_s), [lines (11+21)/82,500, subject to max of 100]	100		23.68

[a] Maximum value applies to waste characteristics category
[b] Maximum value not applicable
[c] No specific maximum value applies to factor. However, pathway score based solely on terrestrial sensitive environments is limited to a maximum of 60

TABLE 6-1 —AIR MIGRATION PATHWAY SCORESHEET

Factor Categories and Factors	Maximum Value	Value Assigned	
Likelihood of Release:			
1. Observed Release	550	0	
2. Potential to Release:			
2a. Gas Potential to Release	500	340	
2b. Particulate Potential to Release	500	340	
2c. Potential to Release (higher of lines 2a and 2b)	500	340	
3. Likelihood of Release (higher of lines 1 and 2c)	550		340
Waste Characteristics:			
4. Toxicity/Mobility	(a)	10000	
5. Hazardous Waste Quantity	(a)	100	
6. Waste Characteristics	100		32
Targets:			
7. Nearest Individual	50	20	
8. Population:			
8a. Level I Concentrations	(b)	0	
8b. Level II Concentrations	(b)	0	
8c. Potential Contamination	(c)	5	
8d. Population (lines 8a + 8b + 8c)	(b)	5	
9. Resources	5	5	
10. Sensitive Environments:			
10a. Actual Contamination	(c)	0	
10b. Potential Contamination	(c)	1	
10c. Sensitive Environments (lines 10a + 10b)	(c)	1	
11. Targets (lines 7 + 8d + 9 + 10c)	(b)		32
Air Migration Pathway Score:			
12. Pathway Score (S_a) [(lines 3 x 6 x 11)/82,500][d]	100		4.088242424

[a] Maximum value applies to waste characteristics category
[b] Maximum value not applicable
[c] No specific maximum value applies to factor. However, pathway score based solely on sensitive environments is limited to a maximum of 60.
[d] Do not round to nearest integer